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NUTRITION PROGRAM NEWS

U. S. DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C.

MAY—AUGUST 1976

Reserve
1.982
A2N955

Fat in the U.S. Diet

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For some time, research has indicated that the kinds and amounts of fat in the diet may have health implications. However, research has not yet yielded clear-cut answers as to the kinds and amounts of fat to recommend to the general public. We do not have new findings on this topic to report here, but we do have information about levels and sources of fat in the U.S. diet.

National food supply statistics allow us to review the U.S. diet since the beginning of the century.¹ These data represent food used up in the economic sense and are not a measure of the amount of food actually eaten. However, they are useful for presenting a picture of average per capita consumption at any one time, for identifying major sources of nutrients, and for showing trends in consumption.

HOW MUCH FAT DOES THE U.S. DIET PROVIDE?

The current level of fat in the U.S. diet is 147 grams per capita per day compared with the peak of 159 grams reached in 1972 (fig. 1). Today's level is one-sixth higher than the 125 grams per capita per day in 1909-13, the earliest years for which records on the nutrient content of the

national food supply are available. Fat includes fats and oils as such and fats occurring naturally in foods, for example, butterfat in milk, marbling in meat, and oils inherent in nuts and seeds.

Increases in fat levels occurred at three time periods: (1) In the twenties; (2) the late thirties and the early forties; and (3) the late sixties and the early seventies (fig. 2). The permanence of the downturn in the level of fat since 1972 remains uncertain because of the well-known preference of Americans for certain fat-containing foods.

The increase in fat has come from foods of vegetable origin; however, animal sources continue to provide the largest proportion (fig. 1).

Not all of the fat available for consumption is eaten. For example, some fat used in deep-fat frying by industry or in the home may be discarded; fat may be trimmed from meat either before or after cooking.

WHAT ARE THE SOURCES OF FAT IN THE U.S. DIET?

Three food groups—fats and oils; meat, poultry, fish; and dairy products—continue to account for about nine-tenths of the fat in the U.S. diet (table 1). As the leading source of fat, the fats and oils group now supplies over two-fifths of the total fat compared with about one-third from the meat, poultry, fish group, and about one-eighth from the dairy products group (excluding butter).

Fats and Oils Group

Foods comprising this group and the percentage each supplies of the total fat provided by the group are shown in table 2. Over the years, three major shifts have occurred in sources of fat within this group.

¹The national food supply statistics are referred to as "disappearance data" because of the method by which they are derived. Commodity specialists of the USDA balance statistics on the Nation's food production, import and exports, net changes in stocks, military takings, and amounts used for feed, seed, and nonfood products—the remainder is considered to have "disappeared" into civilian consumption. These figures are divided by estimates of the total civilian population to obtain per capita amounts on a retail-weight equivalent basis. The nutrient content of the national food supply is estimated by applying appropriate food composition values to these per capita quantities.

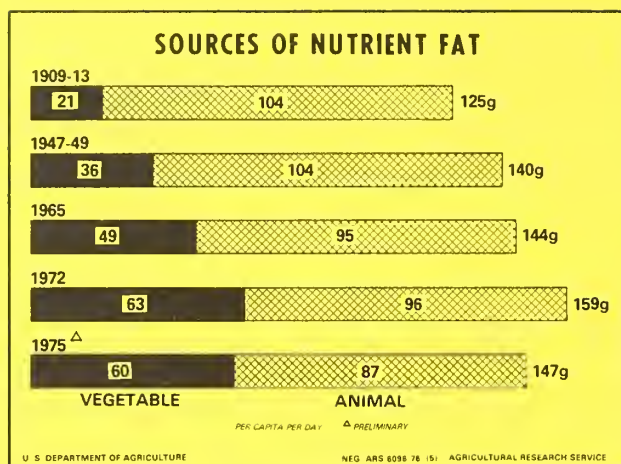


Figure 1

- (1) **Salad and cooking oils have increased in popularity.**—These oils now provide more than one-third of the fat supplied by this group as a result of greater use by consumers and industrial users, especially the fast food industry featuring foods such as french fries, fried chicken, and fried fish.
- (2) **A shift from butter to margarine has taken place.**—Margarine use has exceeded that of butter for about the last two decades. Although margarine has replaced butter to some extent, both products are not being used enough to provide as much fat as butter alone had supplied some 65 years ago. Today, fat from the two table spreads combined is about one-sixth lower than 65 years ago. Contributing to this decline may be the decreased use of foods such as bread and potatoes with which these spreads are commonly served.
- (3) **More shortening and less lard is used today.**—Processing methodology, which permits the manufacture of shortening from increasing domestic supplies of vegetable oils, and the competitive price of these oils have contributed to the shift from lard to shortening. Shortening is now second to salad and cooking oils as a source of fat. On the other hand, fat from all lard, including the small amounts used in margarine and shortening, is only about one-third of the early level.

Meat, Poultry, Fish Group

Table 3 shows the percentage of fat provided by this group from specified foods. Beef and pork account for the major share of the fat; however, their relative importance as sources is shifting.

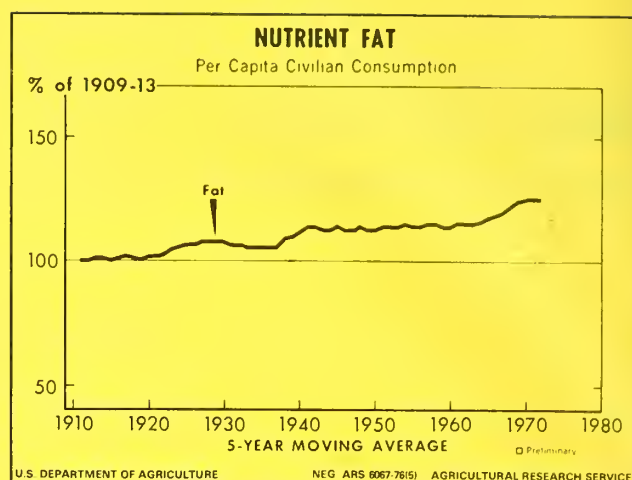


Figure 2

Beef is supplying substantially more fat.—Early in the century beef and lean pork contributed comparable amounts of fat. Now, with beef consumption two-thirds larger than it was 65 years ago, beef provides twice the amount of fat that lean pork does, an amount almost equal to the fat from all pork, both the lean and the fat cuts—bacon and salt pork.

Pork is furnishing a smaller share of the fat, but remains the major provider.—In spite of near record-low consumption, pork is still the leading source of fat from the group, supplying nearly one-half the total amount.

Although the use of poultry has increased almost three-fold since early in the century, the percentage of fat the poultry furnishes increased little, chiefly because it is relatively low in fat.

Dairy Products Group

Table 4 shows the percentage of fat provided by individual dairy products other than butter to the group. Major changes occurred in the contribution of fat from whole fluid milk and cream, cheese, and ice cream and frozen desserts.

Fluid whole milk and cream are providing a smaller share of fat today.—A definite trend away from use of fluid whole milk and cream exists, but fluid whole milk remains the leading contributor to fat from this group. In the early years, fluid whole milk and cream together accounted for over four-fifths of the fat from the dairy products; today, they account for about one-half. On a per-person-per-day basis, this decrease in fat from fluid whole milk and cream represents the amount of fat in two-thirds cup of fluid whole milk. Recent declines from these foods may reflect

the consumer's mounting concern about fat in the diet coupled with the increased availability and use of cream substitutes.

Cheese consumption is increasing.—The percentage of fat contributed to this group by cheese has tripled. Because of extensive use of the many types available, cheese now accounts for more than one-fourth of the fat dairy products provide. This food is now second to fluid whole milk in the percentage of fat it supplies.

Ice cream and frozen desserts continue to be popular foods.—Among the dairy products other than butter, ice cream and other frozen desserts now contribute about 13 percent, or one-eighth of the fat. This is in sharp contrast to the 1 percent they provided at the beginning of the century. The major portion of the gain from these foods had occurred as early as the late forties, but some increase has occurred since that time.

Vegetable and Animal Sources of Fat

As a result of many changes in the kinds and amounts of food consumed, vegetable sources are providing an increasingly larger share of the fat in the U.S. diet (table 5). They now account for almost three times as much of this nutrient as in 1909-13.

This large increase in use of vegetable fats in our diet has resulted from three trends—a dramatic increase in use of salad and cooking oils (use today is more than double the use in 1947-49), the shift from lard to shortening, and the shift from butter to margarine. Because of these shifts to greater use of foods from vegetable sources, fat from animal sources has declined over 15 percent. The drop in use of two foods, butter and lard, is the chief reason for this decline.

FATTY ACID CONTENT OF THE U.S. DIET

Changes in the amounts and sources of fat in the U.S. diet have changed its fatty acid content (table 6). Levels of saturated fatty acids and the monounsaturated fatty acid, oleic acid, have increased somewhat over the years. However, the greatest gain has been in the most common polyunsaturated fatty acid (linoleic) in foods. Currently, the U.S. diet contains over twice as much linoleic acid as it did 65 years ago. The higher present-day level is due mainly to increased use of salad and cooking oils.

Total saturated fatty acids now account for a smaller share of the total fat than in 1909-13 (35 percent compared with 40 percent). The share from linoleic acid has doubled (from 7 to 15 percent), and the share from oleic acid (40 percent) remains the same.

HOW MUCH FOOD ENERGY COMES FROM FAT IN THE U.S. DIET?

Changes in food consumption patterns have affected the proportion of calories contributed by fat and fatty acids in the U.S. diet (table 7). The share of calories provided by fat is now 41 percent, but was 32 percent 65 years ago. Two factors account for the substantially larger share of calories now coming from fat—the increased amount of fat in our diet and the large decline in the level of carbohydrate due mainly to the decreased use of grain products. The share of total calories provided by vegetable sources of fat has increased more than three times since 1909-13, but the share provided by animal sources declined somewhat. Nevertheless, animal sources continue to provide the largest share of calories.

Although our diet contains notably more fat today, total saturated fatty acids account for only 15 percent of the total calories—up from 13 percent. The share of calories from oleic acid has risen from 13 to 16 percent, and from linoleic acid from 2 to 6 percent.

HOW PATTERNS OF FAT CONSUMPTION DIFFER AMONG INDIVIDUALS

Food supply statistics show the levels and sources of fat available for consumption. For information on actual intake, we look to dietary surveys. The latest nationwide study reporting on fat content of individual diets is the USDA survey conducted in the spring of 1965. In this study persons reported on the kinds and amounts of food eaten in 24 hours, both at home and away from home.

Patterns of consumption obtained from this study are presented here. Because food habits do not change rapidly, these patterns should provide useful information for nutrition education programs. Actual levels of fat eaten are not given because amounts may well have changed since the time of the study. However, the per capita amounts of fat available from the U.S. diet in 1965 and 1975 are similar—144 and 147 grams, respectively.

Patterns of Fat Consumption

The sex-age groups whose diets provided the most calories also had the highest fat levels, as might be expected. Fat consumption increased from childhood, reaching its highest point in the teen years when food needs are greatest, then tapered off. Highest fat consumption was observed for the 18-19-year-old males. Males age 15-17 and 20-34 years consumed almost as much. Among the females, the 12-14-year-olds had the largest intake of fat. Fat from foods eaten away from home was highest in diets of older

teenagers (males and females)—about one-fifth of the total amount.

Sources of Fat

The following food groups were the major sources of fat: Meat, poultry, fish; milk and milk products; fats and oils; and grain products. Together, they provided around 85 percent of the fat for most sex-age groups.

Meat, poultry, fish.—Foods from this group were the leading sources of fat in the diets of most individuals. The foods included beef, veal, lamb and mutton, pork, poultry, fish, variety meats, bacon and salt pork, luncheon meats, sausages, and mixtures such as stews and potpies. Except for young children, over 85 percent of the persons in each sex-age category reported using some foods from this group. A higher percentage of persons ate pork than any other item in the group. However, average quantities of beef eaten exceeded those of pork for some age groups, especially for females 15 through 74 years. The percentage of fat contributed by this group of foods reached its peak in the diets of 55-64-year-old adults; the share of fat provided ranged from 26 to 46 percent for all groups except for children under 1 year of age.

Milk and milk products.—This group includes milk and milk drinks, cream, ice cream and milk desserts, cheese, and mixtures made mainly of milk products, such as sauces and dips. Foods from this group supplied most of the fat in diets of infants, accounting for about 75 percent of the total amount for children under 1 year of age. The share of fat from the group decreased as the age of the individuals increased, dropping to about 25 percent for older children and to about 12 percent for 55-64-year-old adults. A slight upturn was noted for persons 65 years and older.

Fats and oils.—Included in this group are foods such as table fats, salad dressings, oils, and cream substitutes. Fats used as ingredients in foods in other groups are excluded. Peak consumption for males was at age 18-19 years. Fat intake for females of the same age was only one-half as much. Highest intake of fat for females was at age 12-14 years, with little difference in later years. In most sex-age groups, less than one-half the total amount of fats and oils was consumed as table fats. This group of foods contributed from 10 to 16 percent of the fat in the day's diets.

Grain products.—Foods from this group, included in practically all diets, consisted of bread and other baked goods, cereals and pastas, and mixtures comprised mostly of grains. Bread products were the most frequently eaten of the grain products. Consumption of foods from this group was greater for males than for females, increasing with age to peak at 15-19 years for males and 12-14 years for

females. Except for diets of children under 1 year, the percentages of total fat supplied by grain products ranged from 12 to 17.

Grain products appear to be a much more important source of fat in these diets than in the U.S. diet. In the survey, foods were reported in the form in which they were eaten. Therefore, when food fats and fat-containing foods were used as ingredients, their fat was included in the contribution of the final product. Thus grain products included whatever fat was used in their preparation. On the other hand, grain products are measured as flour and cereals in the U.S. diet; any fat added later in preparing products is included with the fats and oils group. Fats and oils appear to be a considerably less important source of fat in diets of individuals than in the U.S. diet because they are used as ingredients in many foods.

Grain products contributed about the same proportion of fat as did the fats and oils group to the diets of individuals, but not in the U.S. diet.

Food Energy from Fats

Calories from fats ranged from an average of 39 percent for diets of infants to 45 percent for men 20-64 years old. In the U.S. diet for 1965, the year of the survey, fat accounted for 41 percent of the total calories.

CONCLUSIONS

Whether we look at the U.S. diet or the diets of individuals, it is evident that many people need to use less fat. This applies especially to the fat added to food during preparation and at the table.

A moderate reduction in fat—so that it accounts for some 38 to 40 percent of total calories—can be achieved by simply cutting down on the amount of visible or separable fat used. Reducing the fat to where it provides less than 35 percent of total calories may well require some modification both in food choices and in methods of food preparation. Whatever food choices are recommended, they should, of course, provide for a nutritionally adequate diet. They should also allow for variety in fats and include vegetable oils.

In reducing the amount of fat in the diet, it is well to remember that fat is a dietary essential. Fats provide essential fatty acids and are carriers for the fat-soluble vitamins. Too little fat can result in a diet that is deficient in these nutrients. In addition, a diet too restricted in fat lacks flavor and satiety value and is bulky because a greater volume of food is needed to satisfy the appetite and meet energy needs. Fat, the most concentrated source of food

energy, supplies 9 calories per gram. Protein and carbohydrate each supply 4 calories per gram. (Alcohol supplies 7 calories per gram.)

Although fat is a dietary essential, there is no specific requirement for fat in the diet beyond the amount necessary to serve as a carrier for fat-soluble vitamins and to

provide the essential fatty acids. Only a small quantity is needed for these purposes—15 to 25 grams *if the fat is appropriately chosen*, according to the Food and Nutrition Board, National Academy of Sciences-National Research Council.

REFERENCES

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- (2) U.S. Department of Agriculture, Agricultural Research Service.
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Table 1.—Total fat and percentage of fat furnished by major food groups in the U.S. diet for selected years

Year	Total fat per capita, gram	Percentage ¹ of fat in U.S. diets from—				
		Fats and oils	Meat, poultry, fish	Dairy products excl. butter	Eggs	Other foods
1909-13	125	37	37	15	4	7
1947-49	140	37	33	17	4	8
1965	144	41	34	15	4	8
1972	159	42	35	12	3	7
1975 ²	147	42	34	13	3	7

¹ Percentages may not add to 100 due to rounding.

² Preliminary.

Table 2.—Percentage of fat from fats and oils group in U.S. diet furnished by specified foods for selected years

Year	Percentage ¹ of fat from—				
	Salad and cooking oils	Shortening ²	Lard	Margarine ²	Butter
1909-13	4	22	32	3	38
1947-49	17	23	29	11	20
1965	30	29	14	17	11
1972	36	32	7	17	7
1975 ³	37	33	5	18	7

¹ Percentages may not add to 100 due to rounding.

² Includes small amounts of edible beef fat and lard used in the manufacture of some shortenings and margarines.

³ Preliminary.

Table 3.—Percentage of fat from meat, poultry, fish group in U.S. diet furnished by specified foods for selected years

Year	Percentage ¹ of fat from--							
	Beef	Veal	Pork		Lamb and mutton	Poultry	Fish	Other
			Lean	Fat cuts				
1909-13	25	2	25	35	3	5	3	2
1947-49	24	2	26	36	2	6	2	2
1965	35	1	21	30	2	6	3	2
1972	36	(²)	22	30	1	6	3	2
1975 ³	41	1	19	27	1	7	3	2

¹ Percentages may not add to 100 due to rounding.

² Less than 0.05 percent.

³ Preliminary.

Table 4.—Percentage of fat from dairy products group¹ in U.S. diet furnished by specified foods for selected years

Year	Percentage ² of fat from—					
	Whole fluid milk	Cream	Low-fat fluid milk	Evaporated, condensed, and dry milk	Ice Cream and frozen desserts	Cheese
1909-13	67	18	2	4	1	9
1947-49	57	12	2	9	10	11
1965	55	7	3	6	12	17
1972	49	5	6	4	12	24
1975 ³	43	6	8	3	13	28

¹Excludes butter.

²Percentages may not add to 100 due to rounding.

³Preliminary.

Table 5.—Fat in the U.S. diet from animal and vegetable sources for selected years

Year	Fat from animal sources					Fat from vegetable sources				
	Meat, poultry, fish	Eggs	Dairy products excl. butter	Butter, lard, edible beef	Total ¹ per capita	Other fats and oils	Dry beans, peas nuts, soy products	Flour and cereal products	Other foods	Total ¹ per capita
	<i>Grams</i>	<i>Grams</i>	<i>Grams</i>	<i>Grams</i>	<i>Grams</i>	<i>Grams</i>	<i>Grams</i>	<i>Grams</i>	<i>Grams</i>	<i>Grams</i>
1909-13	46.4	4.8	18.6	33.8	103.5	12.3	2.4	4.8	1.8	21.3
1947-49	46.8	6.0	24.5	27.4	104.8	25.1	4.7	2.6	3.3	35.8
1965	48.4	5.1	21.2	20.4	95.1	38.2	5.5	2.1	3.2	49.0
1972	55.3	5.0	19.6	15.7	95.6	51.5	5.8	2.1	3.6	63.0
1975 ²	50.2	4.4	19.4	12.8	86.8	49.6	5.4	2.1	3.2	60.3

¹Components may not add to total due to rounding.

²Preliminary.

Table 6—Selected fatty acids in U.S. diet and percentage of fat provided for selected years

Year	Grams of fatty acids			Percentage of fat from fatty acids		
	Saturated	Oleic	Linoleic	Saturated	Oleic	Linoleic
1909-13	50.1	50.6	9.1	40	40	7
1947-49	54.3	57.6	13.7	39	41	10
1965	53.9	58.1	17.8	37	40	12
1972	55.6	62.9	23.9	35	40	15
1975 ¹	51.7	58.1	22.3	35	40	15

¹ Preliminary.

Table 7.—Percentage of total calories in U.S. diet from fat and selected fatty acids for 1909-13 and 1975¹

Year	Percentage of calories from—					
	Fat			Fatty Acids		
	Vegetable	Animal	Total	Saturated	Oleic	Linoleic
1909-13	5	27	32	13	13	2
1975	17	24	41	15	16	6

¹ Preliminary.

MATERIALS

Listing of the following materials is for the information of readers and does not necessarily mean recommendation. Materials or information may be obtained from the address given.

Nutritional Review, reprinted from "National Food Situation" November 1975 and a table "Food Consumption Per

Capita by Major Food Groups, 1947-49, 1957-59 averages, and annual 1963-75." CFE(Adm.) 299-10, January 1976, 11 pages. USDA. Available from Consumer and Food Economics Institute, Agricultural Research Service, USDA, Hyattsville, Md. 20782. Single copies free.

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(The Secretary of Agriculture has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget through June 30, 1979.)